

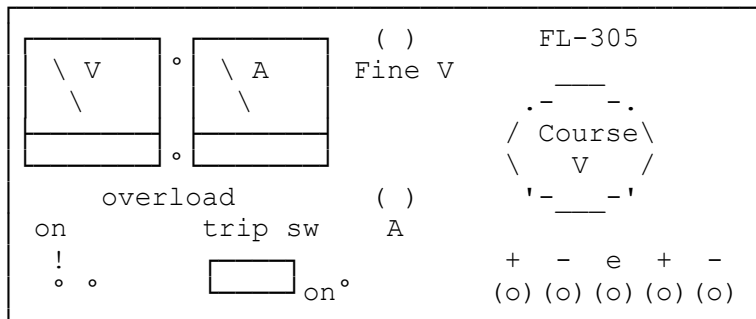
0-35V 0-5A Lab PSU CS FL-305

By G8MNY

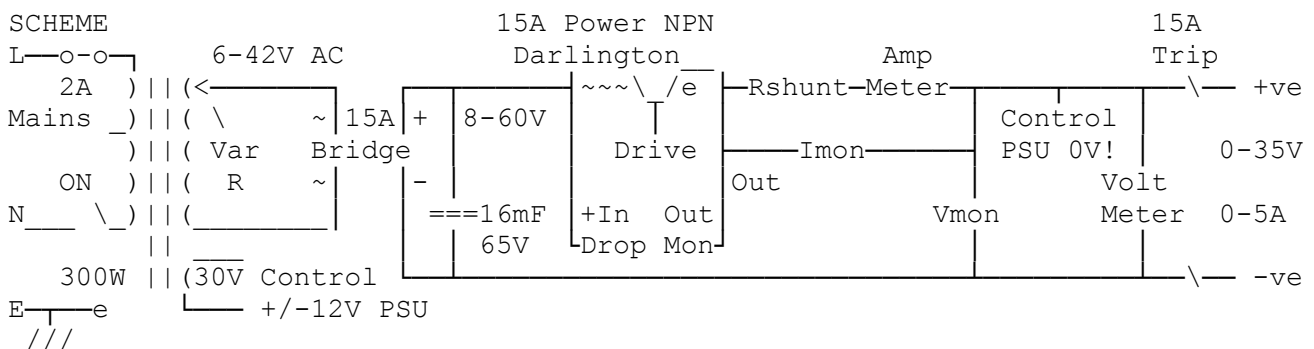
(Corrections Nov 19)

(8 Bit ASCII graphics use code page 437 or 850, Terminal Font)

Here is a very unusual circuit principles, of this Italian 0-35V 0-5A PSU. It uses a transformer variac secondary to make an efficient linear regulator PSU, together with variable current limiting & dissipation power fold back.

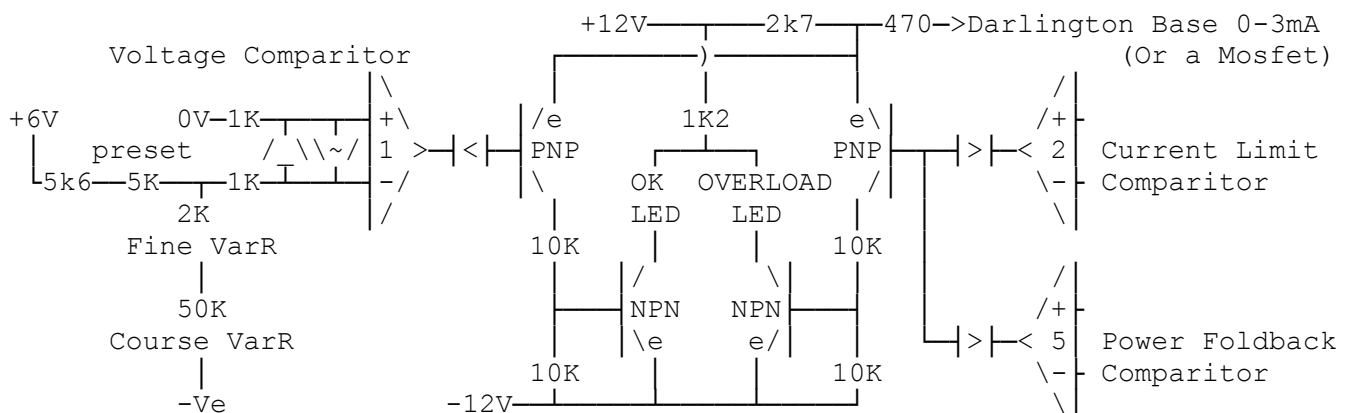


It was all blown up & modified into a simple raw PSU. So I did a lot of reverse engineering, to find out it how it originally worked, before attempting the restoration.



The coarse Voltage Variac control has stops on it to give between 6V - 42V AC, & a 50K Var R to control the course regulated Volts. Unusually a separate 30V winding is used to make a floating +/-12V @ 40mA zener PSU on the +ve O/P rail, for 5 Op amps, 6 transistors & 3 LEDs of the complex control circuit.

The 1st Op amp with input protection diodes & 1K Rs, monitors the output Volts, compares PSU -ve through VarR & Fine VarR to +ve from 5K preset & 5K6 using +6V zener reference. And with 2 transistors it shunts away the 3mA drive to the darlington, & lights up the green OK LED.



A 2nd Op amp monitors the output current & compares it to the current set pot & -6V ref zener. Overloads, limit the drive current & with 2 more transistors, by again shunting away the 3mA darlington drive, & lighting the red OVERLOAD LED, instead of the green OK LED.

CONCLUSION

This is now quite useful bench test PSU, able to test low current circuits with the new current limit from "10mA to 10A" @ voltages from "75mV to 35V". Used for testing prototypes, zapping & charging batteries, run modest power rigs (30W) etc.

Be aware not to over voltage kit, as it is a Lab PSU not just a Rig one!

If it is often to be used at this "higher power limit", a 60°C thermal trip glued on the transformer might be a good safety feature to add!

See also tech buls "Lab PSU", "Simple 20A PS", "High AMP Crowbar Protected PSU"

Why Don't U send an interesting bul?

73 De John, G8MNY @ GB7CIP